

# Riparian FACTSHEET

## AGRICULTURAL BUILDING SETBACKS FROM WATERCOURSES IN FARMING AREAS

### Principles

This factsheet provides an overview on building setback standards from watercourses and wetlands in farming areas. Additional information can be found in supporting factsheets and the Guide for Bylaw Development in Farming Areas.

The building setbacks shown in Table 1 are based on the following principles:

- The standard for agricultural areas complements the Riparian Area Regulation (RAR) for fish protection in areas zoned for residential, commercial and industrial development.
- The area between the watercourse and the building is set aside as a streamside protection and enhancement area for riparian vegetation that is to be planted or left to grow. This area is not to be used for any ancillary service uses such as retention ponds, utilities, machinery storage, access for building maintenance, roads, parking or other impervious surfaces.
- They apply to agricultural land that is currently growing a crop or fallowed and is therefore considered to be developed.
- The setback distance varies depending on type of agricultural facilities and watercourse classification.
- They apply to new buildings only and all existing agricultural buildings and structures are exempt;
- They do not apply to any areas where riparian vegetation may be removed to site or construct a building or facility.
- Contact with Department of Fisheries and Oceans (DFO) is required to remove any riparian vegetation such as shrubs or trees. For direction related to changes in and about a stream, refer to the Ministry of Environment (MOE) website.



Riparian vegetation provides the following important features and functions for watercourses:

- large woody debris
- bank stability
- channel stability
- shade
- food and nutrients
- filtration

Riparian vegetation provides important habitat for both fish and wildlife. Information on native plant species for riparian planting can be found in the Environmental Farm Plan (EFP) Riparian Management Field Workbook.

It is recognized that for low gradient channelized streams and ditches in agricultural areas, maintaining large woody debris (LWD) functions may be incompatible with agricultural drainage requirements.

Variances to the building setback standards supported by a qualified professional's report may be considered. Variances can only be obtained for Category 3 and 4, as Categories 1 and 2 are set by the Agricultural Waste Control Regulation under the Environmental Management Act.

## Agricultural Development

The agricultural building setback standards apply to agricultural land that is already considered to be developed such as land that has been cleared for crop production or being farmed in an active manner. Crops will include plants grown under nursery and agroforestry systems.

Activities not related to the building or building construction such as on-farm drainage and irrigation systems, utility works, farm roads, removal or disruption of soil, cropping and animal husbandry practices are all part of the Environmental Farm Plan Process and are not covered under these building setback standards.

## Agricultural Building Categories

The building setbacks apply to the construction of agricultural buildings and related ancillary service uses. These uses include roads, retention ponds, gas, water, electricity, machinery storage, building maintenance access, parking or other impervious areas associated with the building and must be outside the setback distances listed in Table 1.

The setback standards also apply to on farm composting and other media production facilities, storage facilities and confined livestock areas. Setback distances are established for the following categories:

The Agriculture Waste Control Regulation establishes the setback requirements for Categories 1 and 2.

**Category 1** Specified buildings and facilities identified by the Agricultural Waste Control Regulation that are considered to have a high risk for causing pollution must be set back 30 m from any watercourse. Category 1 facilities include Solid Agricultural Waste Field Storage with greater than 2 weeks storage, Confined Livestock Area with greater than 10 agricultural units and Seasonal Feeding Areas.

**Category 2** Specified buildings and facilities covered by the Agricultural Waste Control Regulation and other regulations that are considered to have a slightly lower risk for causing pollution than those in Category 1 must be set back a minimum distance of 15 m from any watercourse. Category 2 facilities include Agricultural Waste Storage Facilities (engineered manure pits); chemical, compost and wood waste storage; on farm growing media production, mushroom barn, confined livestock area with less than 10 agricultural units, silo, incinerator and petroleum storage.

**Category 3** Buildings and facilities that are higher risk of discharging contaminants than Category 4 buildings and are not covered by the Agricultural Waste Control Regulation are setback 15 m from natural and channelized streams and 5 m from constructed channels and constructed ditches. Examples of Category 3 facilities are a livestock barn, brooder house, fur farming shed, livestock shelter and stable, hatchery and milking facilities.

**Category 4** Facilities and buildings where a risk of discharging contaminants is not likely or can be easily contained may be set back closer than Category 3 buildings on channelized streams depending on channel width, but have a set distance from natural streams of 15 m and 5 m from constructed channels and constructed ditches. Examples of Category 4 facilities are greenhouses, machine storage, on farm processing, direct farm marketing, crop storage, granary, shelters, hives, machine and equipment storage, cidery, retention and detention ponds and other impervious surfaces.

*Where a municipality is responsible for the maintenance of a constructed channel or constructed ditch, the minimum setback distance for Category 3 and 4 facilities is 7 m. In these cases, the maintenance should be done from the north and east sides whenever possible, allowing the vegetation on the south and west sides to remain undisturbed. The Drainage Management Guide provides additional information.*

Table 1 at the end of this fact sheet summarizes the various categories.

## Watercourse Classification

The watercourse classification definitions shown in this factsheet are to be used for establishing building setbacks only. The watercourse classification used in the drainage management and riparian assessments differ slightly. A watercourse may change from one classification to another as noted in the diagram below.

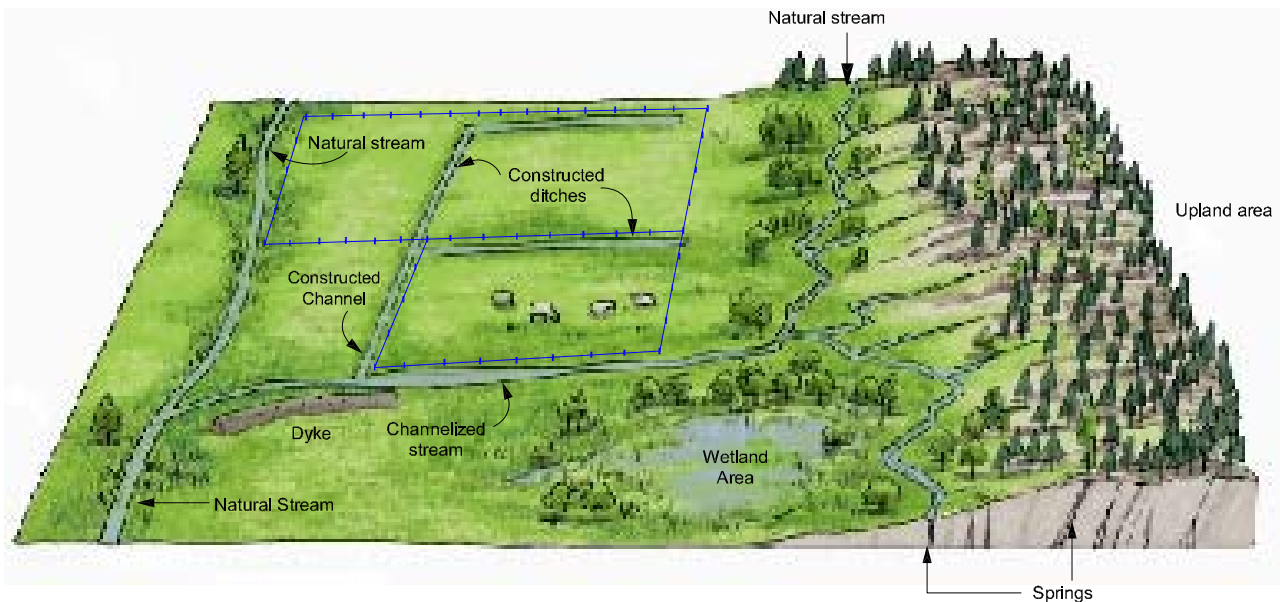


Figure 1 Watercourse Classification

The setback distance that applies will be based on the classification of the watercourse adjacent to the building to be constructed. For channelized streams and constructed channels a Qualified Environmental Professional must be used to confirm classifications in regions where classification mapping is not available.

The agricultural watercourse classification includes:

- **Natural streams** – watercourses that have not been significantly altered by human activity and are predominantly in their natural state as defined by the watercourse (stream) definition at the end of this factsheet.
- **Channelized streams** – permanent or relocated streams that have been dyked, diverted or straightened and carry drainage flows from headwaters or significant sources of groundwater. Reaches of channelized streams may be confined by roads and fences and in many cases can also meander through fields.

Man made channels that divert irrigation water from a stream but return overflow water back to a stream in a manner that allows fish access are classified as channelized streams.

- **Constructed channels** – man made drainage channels that carry drainage water from more than one property but **do not** carry water from headwaters or significant sources of groundwater. Flows in agricultural constructed channels may be year round and are not regulated. Constructed channels may also deliver water for irrigation purposes.
- **Constructed ditches** – man made drainage channels that carry drainage water from one property but **do not** carry water from headwaters or significant sources of groundwater. Flows in agricultural constructed ditches may be year round and are not regulated. Constructed ditches may also deliver water for irrigation purposes<sup>1</sup>.

*The only difference between constructed channels and constructed ditches is the number of agricultural properties that are drained by the watercourse. This differentiation is required to ensure that the watercourse maintenance Processes outlined in the Drainage Management Guide for constructed ditches are followed.*

<sup>1</sup> A constructed ditch that temporarily diverts water for irrigation purposes, but is dry during the non-irrigation season, should be screened to prevent fish access.

## Setback Distance Measurements

The setback distances for agriculture buildings and facilities adjacent to watercourses are shown in Table 1. The building setback distance from each type of watercourse must be measured from the top of bank. The following drawings provide additional guidance.

### Natural Streams

Natural streams with a distinct top of bank will have the setback distance measured from the top of bank as shown in Figure 2.

The minimum setback distance for categories 2, 3, and 4 buildings is 15 m. See Table 1.

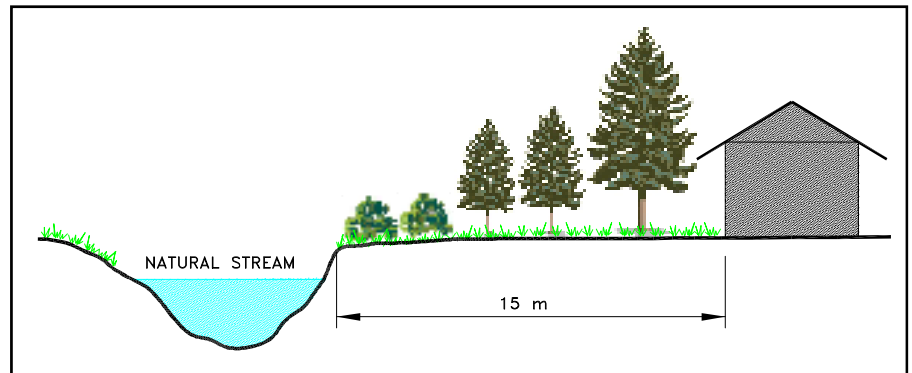
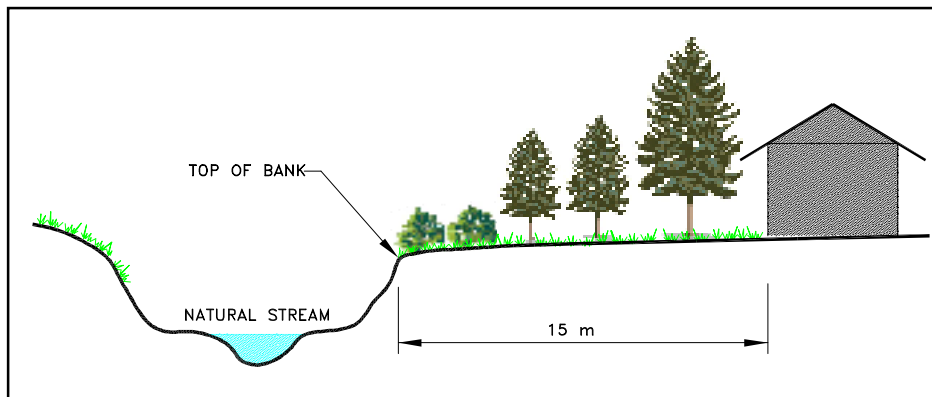


Figure 2 Natural Stream Setback for Categories 2, 3, and 4



For natural streams that may have multiple banks, measure the setback distance from the bank that is furthest from the center of the stream, as shown in Figure 3.

Figure 3 Natural Stream Setback with Multiple Banks Category 2, 3, and 4

For natural streams in a ravine measure the setback distance horizontally from the top of bank in the ravine as shown in Figure 4.

The setback distance must be at least 15 m from the stream top of bank. There is also a requirement that the minimum building setback from the top of the ravine is 5 m, which may cause the setback from the stream bank to exceed 15 m in some instances. Where bank stability may be a problem the setback distance from the top of the ravine should be assessed by a professional. Local governments may also establish covenants or further setbacks in situations where slope stability is a problem.

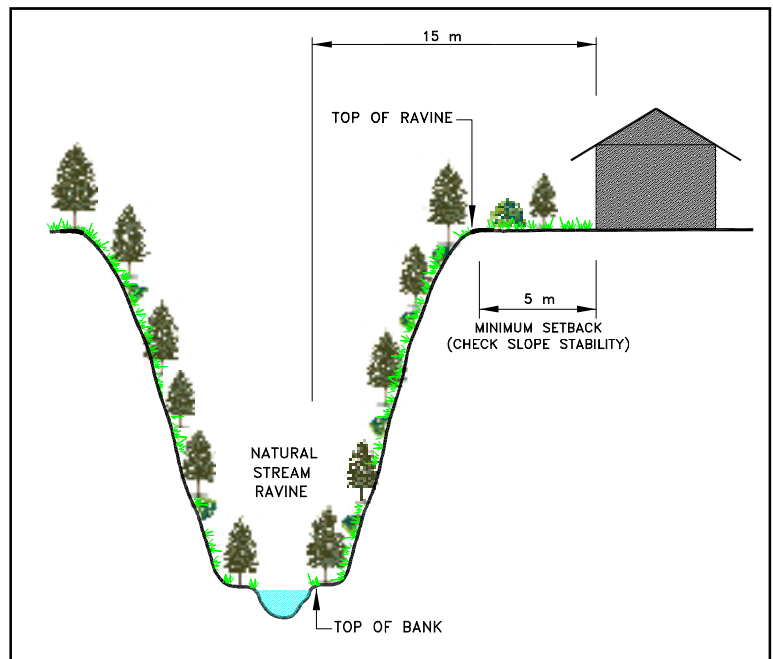
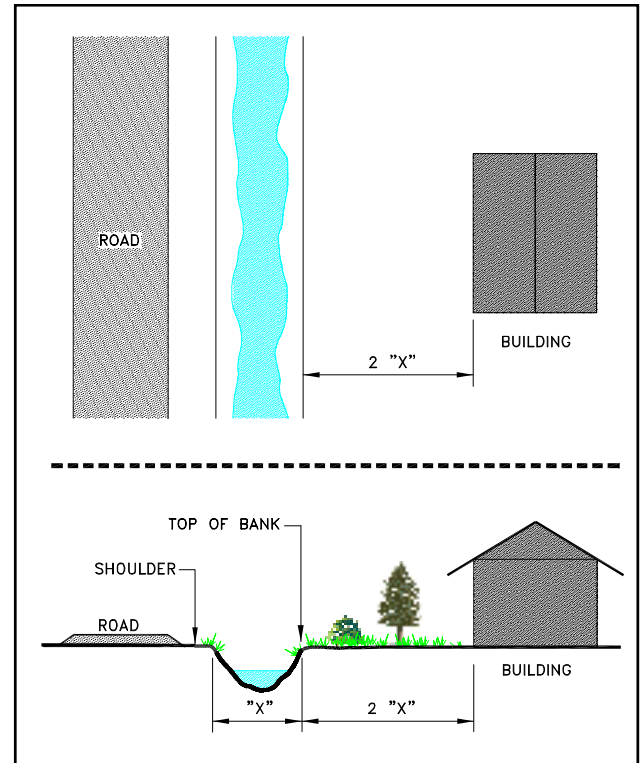


Figure 4 Natural Stream Setback In a Large Ravine

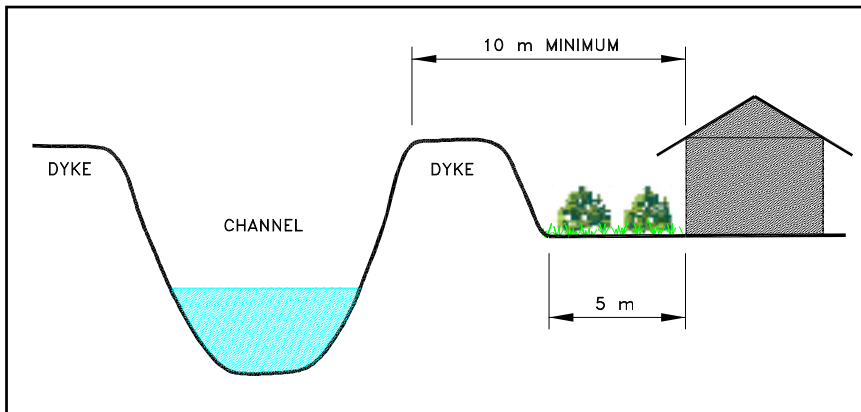
## Channelized Streams

The setback distance from a channelized stream for Category 4 facilities is determined by multiplying the width of the channel at the top of bank by two times as shown in Figure 5. For Category 4 facilities on channelized streams, the minimum setback will be 10 meters and the maximum will be 15 m.

**Figure 5**  
Determining Setback Distance  
for a Channelized Stream



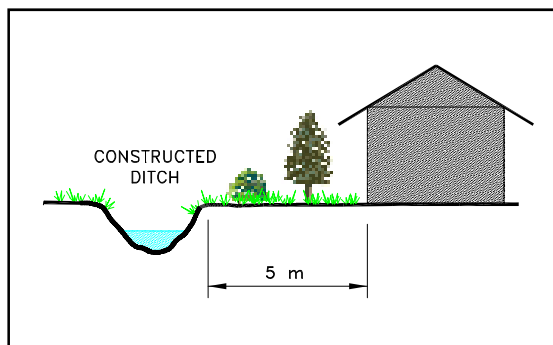
## Channelized Streams Confined by a Dyke



**Figure 6** Channelized Stream Confined by a Dyke

The setback distance for a channelized stream that is confined by a dyke should be measured from the top surface of the dyke as shown in Figure 6. The setback distance from the channelized stream may exceed 10 m for large dyke systems, as the minimum setback distance from the toe of the dyke should always be a minimum of 5 m. Check local government requirements as further setbacks from the toe may be required in some areas.

## Constructed Channels and Ditches



**Figure 7** Constructed Channel and Ditch Setback

Constructed channels and ditches by their very nature always have a defined top of bank. The setback distance is measured from the top of bank as shown in Figure 7.

The setback distance from constructed channel and ditches will be 5 m for Category 3 and 4 facilities.

For constructed channels and ditches where the responsibility for maintenance is a municipality, drainage or dyking district the minimum setback will be 7 m.

## Agricultural Building Setback Standards

The agricultural building setback standards are shown in Table 1. Existing buildings are exempt from these building setbacks and those that are closer than the standards will be identified as non-conforming within a zoning bylaw. In the event of a fire, rebuilding the facility on the same footings with no changes to the building will not require an assessment to be done. If the landowner intends to alter or extend the existing foundation and it is closer than the building setback standard then a QEP is required to conduct an assessment.

Siting of agricultural buildings for floodplain management and flood proofing are not covered in this factsheet. See factsheet: *“Land Use Management Guidelines and Setbacks in Floodplains.”* This factsheet and other information available in other factsheets can be found on the Sustainable Agricultural Management Branch website at [www.al.gov.bc.ca/resmgmt](http://www.al.gov.bc.ca/resmgmt).

Setbacks for residential buildings on Agricultural Lands are established by the Riparian Area Regulation and are not considered here.

The maximum setbacks shown in the table are only to be used for establishing municipal bylaws. The watercourse building setbacks do not take into account considerations that may require greater setbacks. (e.g. lot lines, species at risk, municipal maintenance access, water used for domestic purposes and floodplain requirements). In regions where stream mapping work has been conducted local governments, DFO and MOE may classify some constructed ditches as channelized streams because they are deemed very important fish habitat. Producers may also wish to exceed the maximum setbacks for their own reasons. Additional information is available in the Biodiversity Guide.

## Qualified Environmental Professional

### Agriculture Riparian Area Setback

Examples where a Qualified Environmental Professional (QEP) will be required with respect to building setbacks are:

1. If appropriate mapping is not available to classify a stream according to the watercourse types shown in Table 1, a QEP must be retained to determine the applicable classification if the watercourse is not a natural stream or a constructed ditch. The QEP’s assessment will determine whether the watercourse in question is either a channelized stream or a constructed channel.
2. If the setback standard causes a hardship on the landowner, a variance from the standard may be investigated using a QEP. The QEP would be retained by the landowner to conduct a site assessment and prepare a report that identifies any options that may be available. The report would then be submitted to local government and/or agencies for consideration. Approval for variances is required from local government where bylaws are in place and a letter of advice from DFO in regions with no local government bylaws. Variances are only allowed for Category 3 and 4 buildings and where undue hardship can be demonstrated as a result of the setback.
3. Where setbacks that are desired are non-

conforming with local government bylaw regulations.

### Related Management Standards and Guidance

A Qualified Environmental Professional may also be required to assess building site coverage that does not conform to the Guide for Bylaw Development in Farming Areas or other variances from Local Government bylaws such as:

- 1) Farm buildings other than greenhouses that cover more than 35% of the lot area or are larger than 3500m<sup>2</sup>.
- 2) Greenhouses that cover more than 75% of the lot area.
- 3) A farm building to be constructed in the 1 in 200 year floodplain. A QEP may be required to prepare a report that outlines building siting, placement of fill and site stability if a variance from a local government bylaw is requested. See fact sheet *“Floodplain-Based Land Use Management Guidelines and Setbacks for Farmland Development.”*
- 4) Facilities that may impact channel flows due to increased stormwater runoff. See fact sheet: *“Stormwater Management Planning for Agricultural Facilities”*.

## Definitions

### Agroforestry

The following agroforestry systems are considered as farmed areas:

***Integrated Riparian Management System*** – management of areas bordering watercourses to enhance and protect aquatic resources while generating economic benefit through the production of non-timber forest products and timber.

***Timberbelt System*** – multiple rows of trees planted for both environmental protection and the production of traditional agricultural crops, non – timber forest products and timber.

***Forest Farming System*** – the intentional manipulation through sustainable, integrated cultivation of both timber and shade-requiring non-timber crops in managed forested areas on agricultural lands.

### Agricultural Unit

An agricultural unit is equal to the live weight of 455 kg (1000 lbs) of livestock, poultry or farmed game or any combination of them equaling 455 kg.

### Agriculture Waste Storage Facility

A facility used to contain agriculture liquid or solid waste, or biosolids prior to use or disposal, but does not include a vehicle or any mobile equipment used for transportation or disposal of agriculture solid or liquid waste. An agriculture waste storage facility includes a structure, reservoir, lagoon, cistern, gutter, tank or bermed area for containing agricultural waste prior to its use or disposal.

### Ancillary Service Uses

The use of agricultural land which may include but is not limited to retention ponds, utilities, machinery storage, access for building maintenance, roads, parking or other impervious surfaces.

### Building Setback Distance

The distance measured horizontally from the watercourse top of bank to the outside of the foundation wall. The section on setback distance measurements provides clarification of top of banks from various watercourses.

### Channelized Stream

Permanent or relocated streams that have been dyked, diverted or straightened and carry drainage flows from headwaters or significant sources of groundwater. Reaches of channelized streams may be confined by roads and fences and in many cases also meander through fields. Channels that divert irrigation water from a stream but return overflow water back to a stream in a manner that allows fish access are classified as channelized streams.

NOTE: Channel width is used to determine the setback distance on channelized streams. Channel width is determined using the process outlined in Figure 5.

### Confined Livestock Area

An outdoor, non grazing area where livestock, poultry or farmed game is confined by fences, other structures or topography including feedlots, paddocks, corrals, exercise yards and holding area, but not including seasonal feeding areas.

### Constructed Channels

Man made drainage channels that carry drainage water from more than one property but **do not** carry water from headwaters or significant sources of groundwater. Flows in agricultural constructed channels may be year round and are not regulated. Constructed channels may also deliver water for irrigation purposes.

### Constructed Ditches

Man made drainage channels that carry drainage water from one property but **do not** carry water from headwaters or significant sources of ground water. Flows in agricultural constructed ditches may be year round and are not regulated. Constructed ditches may also deliver water for irrigation purposes.

## **Definitions (continued)**

### **Fallow**

Land that is uncultivated or plowed and tilled but left unseeded within a crop rotation.

### **Fish and Wildlife Habitat**

The definition for habitat used is the same as the Water Act Regulation which defines habitat as the areas in and about a stream, including the quantity and quality of water on which fish or wildlife depend directly or indirectly to carry out their life processes; and spawning grounds and the nursery, rearing, food supply and migration areas. Under this definition, not only the watercourse itself, but also the vegetated streamside (or riparian) areas, which provide nutrients and shade to the stream, are recognized as fish and wildlife habitat.

### **Headwaters**

The source or sources of stream flow that come from an upper part of a stream or watershed and contribute to the base flow of a stream.

### **Impervious Surface**

A building or constructed surface made of concrete, asphalt, plastic or other material that does not permit water to soak into the ground.

### **Natural Stream**

Watercourses that have not been significantly altered by human activity and are predominantly in their natural state as defined by the watercourse (stream) definition in this factsheet.

### **Ravine**

A small, narrow and steep sided valley that has been created by the natural flow of a stream.

### **Riparian Vegetation**

Vegetation, other than agricultural crops, that is adjacent to a watercourse in the transitional zone between aquatic and upland environments. DFO approval is required before any removal within the building setback distance.

### **Seasonal Feeding Area**

An area used for forage or other crop production and used seasonally for feeding livestock, poultry or farmed game that is primarily sustained by supplemental feed, but does not include a confined livestock area or grazing area.

### **Solid Agricultural Waste**

Agricultural waste that is 20% or more solid matter and will not flow when piled.

### **Top of Bank**

The first break in a bank slope where the break occurs such that the grade beyond the break is flatter than 3:1 for a minimum distance of 15 m measured horizontally from the break. For multiple banks, the setback distance will be measured from the top of the bank that is farthest from the center of the stream.

### **Qualified Environmental Professional (QEP)**

A QEP is an applied scientist or technologist, acting alone or together with another qualified environmental professional, if

- (a) the individual is registered and in good standing in British Columbia with an appropriate professional organization constituted under an Act, acting under that association's code of ethics and subject to disciplinary action by that association,
- (b) the individual's area of expertise is recognized in the Riparian Area Regulation assessment methods as one that is acceptable for the purpose of providing all or part of an assessment report in respect of that development proposal, and
- (c) the individual is acting within that individual's area of expertise.

### **Watercourse (Stream)**

The Water Act Regulation of "stream" includes a natural watercourse or source of water supply, whether usually containing water or not, ground water, and a lake, river, creek, spring, ravine, swamp, wetland and gulch.



**Table 1 Building and Facilities Setbacks from Watercourses for Riparian Protection in Farming Areas \* a f**

Watercourse Type	Category 1	Category 2	Category 3	Category 4
	<ul style="list-style-type: none"> <li>• Confined Livestock Area &gt; 10 agricultural units<sup>d</sup></li> <li>• Seasonal feeding area</li> <li>• Solid Agricultural Waste Field Storage with &gt;2 weeks storage time</li> </ul>	<ul style="list-style-type: none"> <li>• Agricultural Waste Storage Facility</li> <li>• Chemical, compost, and woodwaste storage</li> <li>• Confined livestock area &lt; 10 agricultural units<sup>d</sup></li> <li>• Incinerator</li> <li>• Mushroom barn</li> <li>• On-farm composting</li> <li>• On-farm soilless medium production and storage</li> <li>• Silo</li> <li>• Petroleum Storage</li> </ul>	<ul style="list-style-type: none"> <li>• Brooder house</li> <li>• Hatchery</li> <li>• Fur farming shed</li> <li>• Livestock barn</li> <li>• Livestock Shelter</li> <li>• Milking facility</li> <li>• Stable</li> </ul>	<ul style="list-style-type: none"> <li>• Boiler Room</li> <li>• Cidery</li> <li>• Cold Frame</li> <li>• Crop Storage</li> <li>• Detention Pond</li> <li>• Direct Farm Marketing</li> <li>• Granary</li> <li>• Greenhouse</li> <li>• Machinery Storage</li> <li>• On Farm Processing</li> <li>• On Farm Product Preparation</li> <li>• Retention Pond</li> <li>• Impervious Surfaces</li> </ul>
Natural Streams	30 m	15 m	15 m	15 m
Channelized Streams	30 m	15 m	15 m	2 x channel width <sup>b</sup> Minimum of 10 m Maximum 15 m
Constructed Channels and Ditches <sup>e</sup>	30 m	15 m	5 m <sup>c</sup>	5 m <sup>c</sup>

**Notes**

- \* Property safety and risk management concerns may require larger setbacks in some instances and will then override the setback standards shown here.
- a Setback distances are measured from the top of bank as defined in this factsheet.
- b Channel width is determined from the top of bank to top of bank.
- c The minimum building setback distance from a constructed channel or constructed ditch which a municipality is responsible for maintaining is 7 metres.
- d Agriculture unit is equal to the live weight of 455 kg (1000 lbs) of livestock, poultry or farmed game or any combination equaling this weight.
- e There is no differentiation between constructed channels and constructed ditches for the purposes of building setbacks, only for drainage maintenance purposes.
- f The setback from a domestic water intake for all agricultural buildings is 30 m.

**FOR FUTHER INFORMATION CONTACT**

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